

ABSTRACT OF THE DISCLOSURE

A numerical controller for performing a machining operation by controlling relative position of a workpiece and a tool in synchronism with a rotational position of a rotational axis to which the workpiece or the tool is attached, without causing time delay of position control of the tool relative to the workpiece in varying a rotational velocity of the rotational axis. A rotational position θ_i ($i = 0, 1, \dots$) of a workpiece on the rotational axis, a position (X_i, Z_i) of the tool relative to the workpiece when the workpiece is at the rotational position θ_i , and the rotational velocity V_i of the workpiece from the rotational position θ_i to the rotational position θ_{i+1} are set in advance. Time T_i required for rotating the workpiece from the rotational position θ_i to the rotational position θ_{i+1} at the rotational velocity V_i is obtained. Velocities V_{x_i} and V_{z_i} of the workpiece are obtained so that the position of the workpiece reaches the next set position (X_{i+1}, Z_{i+1}) in the time T_i . Servomotors for the spindle, the X-axis and the Z-axis are driven at the set velocity or the calculated velocities to provide relative motions to the workpiece and the tool for the machining operation.